

FIELD TRIPS OF THE CLUB

FIELD TRIP OF SUNDAY, MARCH 15

Snow lingered on the northern slopes of the hillsides in the Ramapo Section of the Harriman State Park, on the field excursion of Sunday, March 15, and although the elm and maple buds were swelling, the alder catkins turning a lighter hue, and the willow twigs bright yellow, floral signs of spring were lacking. Not even a skunk cabbage spathe could be found. Spring comes a week or two later in these hills, a thousand feet above the sea level, than on Long Island. So botanizing turned to the mosses and liverworts, some of which displayed plenty of persistent capsules, ripened the previous autumn, and some showed the beginnings of new growth, especially on the brooks on southern slopes. *Georgia pellucida*, *Brachythecium plumosum*, *Pogonatum brevicaule* and *Webera sessilis* showed plenty of capsules. An interesting species, without capsules, but identifiable by the leaves, was *Fissidens taxifolius*, a tiny member of this genus, with leaves under the hand lens quite suggestive of the yew. Two liverworts, *Conocephalum* and *Plagiochilia*, though submerged by the brooks high with melting snow, showed bright new growth. A dozen members of the Torrey Botanical Club were joined, for part of the walk, by twenty members of the Trail Campers of America, from their camp on Stony Brook, near Sloatsburg.

RAYMOND H. TORREY

FIELD TRIP OF SUNDAY, MARCH 22

Spring was obviously nearer, but not quite definitely declared, on the excursion on Sunday, March 22, to Cushetunk Mountain, in Hunterdon County, New Jersey, led by Mrs. Gladys P. Anderson. A few green things, grasses along the brooks, chickweed in the plowed fields, and red maple buds soon to blossom, gave promise of spring, in spite of the raw, cloudy day. But, as the excursion was primarily for lichens, it did not matter: they were easy to observe, on rocks, trees and earth. Mrs. Anderson, who is one of the most expert members of the Club in this interesting class of symbiotic cryptogams, had taken a great deal of pains to make her explanations effective. She had prepared a two-page typewritten list, giving about fifty species which she expected to find, and distributed the lists among the group. Many of the

species were found readily, especially various cladonias, with differing forms of apothecia; physcias, with their tiny black spore disks, on tree bark; peltigeras, and others. She explained the characteristics of the lichens, which, to her, seem particularly interesting, because they are so primitive, and yet adaptive to various environments; flexible and plastic and not so fixed in their habits as the higher, flowering plants, which have adopted definite forms and keep to them; the lichens are still experimenting in their methods of subsistence and reproduction, and are capable of renewal by cell divisions, or by casting off parts of their thalli (soredia) which grow into new individuals when conditions may not encourage, even for many years, the production of spore bearing organs. Mrs. Anderson pointed out that certain species favor one kind of rocks, and others another, and as the region around Cushetunk Mountain is remarkably varied in geological formations, quite different species are found sometimes exclusively on one kind of rock and not on the others. Cushetunk Mountain is a horse-shoe shaped ridge of basalt rock, similar in nature to that of the Palisades, enclosing a sandstone valley (Brunswick shale phase of the Newark formation). The same sandstone is found on the south flank of the horseshoe, then another narrow ridge of basalt, and to the west, are successively, limestone, gneiss, limestone, quartzite and sandstone (Stockton formation), each sustaining characteristic lichen forms. The region would be interesting to study to see if the higher plants show differences based on the differing rocks. Two large limestone quarries were interesting, and a solitary plant of the lime-loving maidenhair spleenwort had established itself in a crevice left when one of the openings was abandoned, at least fifty years ago.

Extraordinarily large and long branched plants of the nightshade, *Solanum Dulcamara*, grew on the walls. Another *Solanum*, *S. carolinense*, was found with persistent yellow berries from the previous fall, in abandoned plowland, underlaid by the Kittatiny limestone, north of the quarries. (Does this genus prefer limestone soils?) Some algae and lichens had become established on the raw limerock. Notable mineral features were incipient stalactitic formations, deposited by water creeping down an overhanging wall, into oddly lobed and fluted buff-colored smooth-surfaced masses; and a bright bluish coloring on some of the rock, possibly due to a small amount of manganese. On the farmhouse on

the quarry property were several large and ancient box shrubs, at least a century old. The party crossed the various formations rather sharply defined on the surface by fault boundaries, one of which, between the gneiss and sandstone and limestone, is the great fault, the Logan Line, which crosses New Jersey at the eastern border of the older rocks, but noted no apparent differences in tree flora, although it was obvious that the farmers had chosen the limestone areas for their plowlands, and left the forest on the gneiss and quartzite; or else that the trees had retaken the older rocks while the limestone areas remained in fields and pasture. Mrs. Anderson promises a field excursion for the club sometime to be devoted to ecological effects of geological formations on the occurrence of lichen species. The party made the trip, which was held jointly with the New York section of the Green Mountain Club, in automobiles, ten cars, with about forty persons, ten members of the Torrey Botanical Club, seventeen of the Green Mountain Club and the rest guests of both. One interesting and beautiful moss was noted, *Bartramia pomiformis*, with capsules persistent from the previous season, dry and withered, but still showing the pretty fluted urn shape.

RAYMOND H. TORREY

FIELD TRIP OF SUNDAY, MARCH 29

The special quest of this early spring outing into the heart of the New Jersey Pine Barrens was to find Conrad's broom crowberry in blossom. The particular location chosen to find this rare plant was the place discovered by Dr. John Torrey about ninety years ago. Subsequently the stand was lost, and rediscovered by Dr. N. L. Britton and Witmer Stone fifty years later. In an article published in the *N. Y. Evening Post*, describing this crowberry, Mr. Raymond H. Torrey states "A strange location for such a sub-arctic plant, a relic of the last ice period, thriving in these hot sands 40,000 years after the glaciers that drove it south melted away. Not beautiful, except under the hand lens, but a sturdy survivor of ancient plant associations, many of the former elements of which have migrated northward and no longer exist in the region."

The crowberry was not in general flower, the season being about one week later than usual, but a few sprays were found in flower. *Arbutus* and the characteristic Pine Barrens plant *pyxie*

(*Pyxidantha barbulata*) were abundantly found in bud, but not in open flower. Other plants found which are abundant in the region were:

- Cassandra (*Chamaedaphne calyculata*)
- Bearberry (*Arctostaphylos uva-ursi*)
- Pine barrens Heather (*Hudsonia ericoides*)
- Inkberry (*Ilex glabra*)
- Mountain Laurel (*Kalmia latifolia*)
- Sheep Laurel (*Kalmia angustifolia*)
- Sweet Pepperbush (*Clethra alnifolia*)
- Pitch Pine (*Pinus rigida*)
- White Cedar (*Chamaecyparis thyoides*)
- Red Cedar (*Juniperus virginiana*)
- Pitcher Plant (*Sarracenia purpurea*)
- Cranberry (*Oxycoccus macrocarpon*)

Forty members and guests made the West Plains Pine Barrens trip, motoring from Newark and New York.

WM. GAVIN TAYLOR

FIELD TRIP OF SUNDAY, APRIL 5

Forty members and guests of the club visited the region on the east side of the Hudson River, opposite Bear Mountain Park, including Anthony's Nose, Sunday, April 5. Spring flowers were delayed in bloom, owing to cool weather, only a few hepatica blossoms appearing, while arbutus was still in bud. Spring fruiting mosses were in good condition, with plentiful fresh capsules, on *Pohlia nutans*, *Ceratodon purpureus* and *Mnium cuspidatum*. A few spears of *Veratrum viride* showed along the brooks. After visiting the Nature Trails at Bear Mountain the party crossed the bridge and first inspected the stand of southern bald cypress, *Taxodium distichum*, at the edge of the cattail swamp, east of Manitou station on the New York Central Railroad. This occurrence, the farthest north outside of cultivation known to the writer, awaits explanation, as to whether it was established as a pioneer northern stand, possibly seeded by migrating birds; or by branchlets dropped from trees somewhere nearby in cultivation and carried to the spot by the waters of the Hudson, and into this backwater by some extremely high tide through an opening in the railroad tracks one mile south of the spot, which drains the swamp. No cultivated *Taxodium* is to be found about the houses on the

slope above, and the nearest one known to the writer stands on a street in Highland Falls, three miles up the Hudson and on the opposite bank, far from the river.

There are seven trees in the stand; two probably about thirty or forty years old; three about twenty years old, and two ten years old or younger; the younger ones evidently the progeny of some of the older of the group. One of the older trees is in an unhealthy state, with a long bark wound, possibly due to a lightning stroke. The others are apparently quite healthy. No seedlings, or specimens younger than the ten year olds were seen. They grow along a brook descending from the upland and entering the cattail swamp. The older ones stand among a group of gray birches; the younger are more in the open, among willows and cattails. The brackish water from the Hudson reaches them rarely if at all, as the location is two or three feet above high tide level. There is no sign of knees about them, but the butts of the older ones have the characteristic pyramidal swelling and fluting.

Lemna was found in plentiful development at this early date in a pool near the old abandoned mine in a pyrrhotite deposit which was worked years ago for its sulphur content. An interesting feature of the regions south of Anthony's Nose, in the northern part of the territory of Camp Smith, was the system of trails marked by Colonel William R. Wright, Chief of Staff of the New York National Guard, named, in part, for places in Belgium and northern France, where the Twenty-seventh New York Division fought under British general command, in the breaking of the Hindenburg Line in the autumn of 1918. The pond dammed at the head of Broccy Kill, and the rills entering it, are good places for the study of wet woods flora.

RAYMOND H. TORREY

FIELD TRIP OF SUNDAY, APRIL 12

A party of fifty, consisting of members and guests of the Torrey Botanical Club, and the Westchester Trails Association, rambled over Dunderberg Mountain, on Sunday, April 12, going from Tomkins Cove to Timp Pass, up the Six Chins Trail and over Bockberg, Baldberg and Dunderberg and down the old railroad grade to the river. *Hepatica triloba* was in abundant bloom in many shades; but there seems to be no rule about this variation in coloration from white to deep purple, as to degrees of light and shade.

Arbutus was in bloom, and fairly frequent in occurrence. Poison poke, *Veratrum viride*, was plentiful and well advanced. The deep red pistillate flowers of the beaked hazel, *Corylus rostrata*, were admired under the hand lens. The mosses found on April 5 were plentiful and farther advanced, and in addition was found the quaintly beautiful apple moss, *Bartramia pomiformis*, with its globular capsules. Some attention was paid to the lichens of the genus *Cladonia*, the species *pyxidata*, *crisatella*, and *fimbriata* being common. Fresh beaver workings were observed in a swamp south of the Timp. They obviously prefer the aspen, *Populus tremuloides*, for food and building material where they can get it, but in one case had felled a blue beech, *Carpinus caroliniana*, four inches in diameter, which must have been tough going even for their strong teeth. The purple early leaves of the wood betony, *Pedicularis canadensis*, were striking in hue. It was noted that some of the capsules of mosses which fruit in autumn and which persisted through the winter, were still holding spores, which were discharged by brushing them lightly; this was true of *Catharinea*, and *Dicranella*. Another pretty moss was *Polytrichum piliferum*, with its narrow capsules, distinctly lance-like at this season.

RAYMOND H. TORREY

FIELD TRIP OF SUNDAY, APRIL 19

On April 19 a joint excursion of the Torrey Club and the Metropolitan Council of Geography Teachers was led by the writer and R. C. Geist, members of the respective associations. Thirty-two members and guests were present.

The day was ideal, and the route lay along Pelham Road until just beyond the City Island cross road, where a by-path was followed, detouring around the very considerable auto traffic on the main road. Here were found the yellow adder's tongue or fawn lily, the grape hyacinth, which Gray says is a garden escape, and the crinkle-root or toothwort, *Dentaria diphylla*.

ZALDA NICHOLSON